



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,424	10/16/2003	George Wakalopoulos	ATI-001	2232
3897	7590	12/01/2004	EXAMINER	
SCHNECK & SCHNECK P.O. BOX 2-E SAN JOSE, CA 95109-0005			TRAN, THUY V	
			ART UNIT	PAPER NUMBER
			2821	

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/688,424	WAKALOPULOS, GEORGE	
	<b>Examiner</b>	<b>Art Unit</b>	
	Thuy V. Tran	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM  
**THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 16 October 2003.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 13-22 is/are allowed.
- 6) Claim(s) 1,2 and 7-12 is/are rejected.
- 7) Claim(s) 3-6 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 16 October 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | Paper No(s)/Mail Date. _____.   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>01/29/04</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____.                                   |

**DETAILED ACTION**

This is a response to the Applicant's filing on 10/16/2003. In virtue of this filing, claims 1-22 are currently presented in the instant application.

***Information Disclosure Statement***

1. The information disclosure statement (IDS) submitted on 01/29/2004 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-2 and 7-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakamura (Pub. No.: US 2003/0184235 A1).

With respect to claim 1, Nakamura discloses, in Fig. 1, a wide area electron beam device comprising (1) a chamber [102] having a partially evacuated interior enclosed by walls, including first and second end walls and a side wall structure, (2) a semiconductor slice high voltage cathode [116] near the first end wall of the chamber, (3) a conductive plate anode [117] near the second end wall of the chamber, (4) first and second spaced apart wire mesh electrodes

[112, 113] defining a spatial volume in relation to the chamber side wall structure, and (5) a neutral ion plasma generated (via Vex; see Fig. 1) within the spatial volume between the first and second wire mesh electrodes [112, 113], the ion plasma supplying ions to the cathode through one of the first and second wire mesh electrodes, the ions impinging on the cathode causing secondary electron emission having sufficient energy to traverse through the ion plasma toward the anode, thereby forming an electron beam extending over the anode (see paragraph [0049], lines 1-12).

With respect to claim 2, Nakamura discloses, in Fig. 1, that the semiconductor slice cathode [116] is treated to have a uniform emission of electrons over the surface (see arrows shown in the figure).

With respect to claim 7, Nakamura discloses, in Fig. 1, that the conductive plate anode [117] is planar.

With respect to claim 8, Nakamura discloses, in Fig. 1, that the electron beam extending over the area of the plate has a uniform intensity distribution over the area of the conductive plate anode (see arrows shown in the figure).

With respect to claim 9, Nakamura discloses, in Fig. 1, that a target material [100] for the electron beam is proximate to the anode [117].

With respect to claim 10, Nakamura inherently discloses that the ion plasma is a low-temperature-plasma (see paragraph [0005], lines 5-8; paragraph [0009], lines 1-7).

With respect to claim 11, Nakamura discloses, in Fig. 1, that the electron beam device has means [Vex] for generating a dithering electric field superposed on the electron beam near the conductive plate anode [117].

With respect to claim 12, Nakamura discloses, in Fig. 2A, that the electron beam device has means [32] for generating a magnetic field superposed on the electron beam near the conductive plate anode [117].

*Allowable Subject Matter*

4. Claims 3-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
5. Claims 13-22 are allowed.
6. The following is a statement of reasons for the indication of allowable subject matter:

Prior art fails to disclose or fairly suggest:

- A wide area electron beam device wherein the semiconductor slice is a doped semiconductor wafer that has a center and a radially outwardly extending periphery, in combination with the remaining claimed limitations as called for in claim 3 (claims 4-6 would be allowable since they are dependent on claim 3); and
- A wide area electron beam device comprising (1) a doped semiconductor slice high voltage cathode between the first and second electrodes configured to allow charged particle permeability therethrough and having a high voltage thereon, drawing ions from the plasma through the first wire mesh electrode and producing secondary electrons traveling toward and traversing the second wire mesh grid by means of a positive voltage thereon, and (2) a conductive plate anode near the second wall of the chamber receiving the secondary electrons traversing the second grid thereby forming an electron beam impinging upon a target placed upon the anode, in combination with

the remaining claimed limitations as called for in independent claim 13 (claims 14-22 are allowed since they are dependent on claim 13).

*Citation of relevant prior art*

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Prior art Chaudhari et al. (U.S. Patent No. 5,770,826) discloses atomic beam alignment of liquid crystals.

Prior art Ito et al. (U.S. Patent No. 4,641,031) discloses an ion source apparatus.

Prior art Sugawara et al. (U.S. Patent No. 4,506,160) discloses an ion source apparatus.

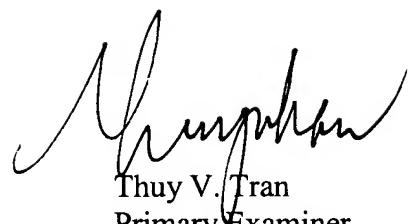
*Inquiry*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuy V. Tran whose telephone number is (571) 272-1828. The examiner can normally be reached on M-F (8:00 AM -5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit: 2821



Thuy V. Tran  
Primary Examiner  
Art Unit 2821

11/29/2004